VIEWPOINT

On the complexity of ethical claims related to shale gas policy

Key words

Shale gas; distributive justice; procedural justice; compensation; energy policy

Introduction (Main text = 4,099 words)

In a recent article in *Local Environment*, Matthew Cotton (2016) lays out a foundation for what an ethical approach to decision making on policy and planning in relation to shale gas development could look like. This is the most comprehensive attempt in peer-reviewed academic literature to characterise and explicate the requirements and constraints on ethically-justified policy in relation to this contentious extractive industry. Cotton (2016) uses Shrader-Frechette's (2002) Principle of Prima Facie Political Equality (PPFPE) to critique policy and planning decisions in the UK in relation to shale gas development. The PPFPE focuses heavily on distributive and procedural justice and gives particular attention to the need for: equitable compensation for any harms sustained, access to information about potential harms, and ability to participate freely in decision making processes (Cotton 2016).

Cotton's (2016) articulation of an ethical framework by which to evaluate the fairness and appropriateness of policy on shale gas development is a major step in the right direction. Evensen (2015, 2016a) has asserted that an explicit account of the circumstances under which development would or would not be ethically justified is perhaps the biggest gap in the policy discourse and debates on this issue. Indeed, there have been numerous public claims about the ethicality of 'fracking' (shale gas development), but until Cotton's (2016) foray into this area, the academic literature on the topic was quite limited (Evensen 2016a). A few prior articles had highlighted distributive justice issues related to fracking (Cotton 2013, Evensen 2015, Fry *et al.* 2015, Hardy and Kelsey 2015, Hays and de Melo-Martín 2014, Hotaling

2013, Malin 2014, Measham *et al.* 2016, Willow and Wylie 2014), procedural justice considerations (Cotton 2013, de Wit 2011, Evensen 2015, Finkel *et al.* 2013, Fry *et al.* 2015), and/or the role of precautionary thinking in ethical approaches to evaluating unconventional gas development (de Melo-Martín *et al.* 2015, Finkel and Hays 2013, Law *et al.* 2014).

Cotton's (2016) article draws together the range of distributive and procedural justice considerations; as such, it is one of the most important social scientific or humanistic articles written to date on this much-debated form of energy development. It offers a solid point of departure for ethical thought on shale gas policy; nevertheless, there is more work to be done. Following Cotton's analysis, aspects of the PPFPE arise as problematic or require additional clarification, including: the role of compensation in distributive justice, the definition of a 'community', the need for information provision, and the best way to ensure procedural justice. Two overarching issues that merit attention in relation to ethical thought on shale gas policy, but that were not addressed by Cotton (2016), are: (1) the role of shale gas development as just one means of energy extraction in a larger energy system – development does not occur in a vacuum – and (2) the role of virtue in determining ethicality of shale gas policies. I speak to these two issues and the four areas of Cotton's argumentation requiring additional attention below.

Revisiting the ethical arguments made to date

Because Cotton (2016) is the scholar to have most comprehensively attempted an account of what is demanded from ethically-justified policy on shale gas development, I use his arguments as a point of departure. This article should not be read as an attack on or repudiation of his analysis, but rather as an attempt to carry the conversation further by exploring some of the concepts in greater detail.

Compensation

Cotton (2016, p. 4) asserts that the PPFPE, and by extension ethical policy, demands that 'unequal treatment must therefore be compensated for (primarily through economic means of wealth redistribution or increased community economic opportunity)'. Based upon this principle, he concludes that the UK Government's current proposed policies for community compensation 'go some way towards fulfilling' the PPFPE requirement, but that 'distributive injustices may still occur' (pp. 7-8). Whilst any policy, no matter how carefully crafted, could still leave open *some* possibility for distributive injustices, it is worth noting that two of the three peer-reviewed distributive justice analyses of shale gas development in print have offered little evidence of injustice (Clough and Bell 2016, Ogneva-Himmelberger and Huang 2015).

In examining development in Pennsylvania, Clough and Bell (2016, p. 1) revealed, 'no evidence of traditional distributive environmental injustice: there is not a disproportionate number of minority or low-income residents in areas near to unconventional [shale gas] wells'. They did, however, reveal that people living close to well sites 'are not enjoying substantial economic benefits from shale gas development' (Clough and Bell 2016, p. 7); nevertheless, they do not explore whether the economic benefits are enough to compensate for the harms sustained. Ogneva-Himmelberger and Huang (2015, p. 171), in their assessment of distributive injustice in three US states (Pennsylvania, Ohio, and West Virginia) reported, 'Our analysis shows that environmental injustice was observed only in Pennsylvania…results for West Virginia and Ohio did not show any evidence of environmental injustice with respect to the five socio-demographic characteristics of population.' The injustice revealed in Pennsylvania was that drilling occurred more frequently in poor areas, but no bias in drilling distribution in that state was observed based on variations in education, race, or age.

Fry *et al.* (2015), in the third study to analyse distributive justice in relation to shale gas, reveal that much of the financial benefit of development within a city in Texas accrues to residents living outside of the city itself, due to split estate mineral rights – where different parties own the surface and subsurface rights. Again, however, there is no explicit analysis of whether compensation received in the community is adequate to compensate for the environmental and health risks sustained within the community – 'noise and light pollution, and report[ed] nosebleeds, nausea, headaches and other symptoms' (Fry *et al.* 2015, p. 99).

A strict equality stance would deem one party benefiting more than another to be 'injustice'. Nevertheless, it would seem to violate common sense morality, and Rawls' (2005, 2009) oft cited conceptions of distributive justice, to deny one party benefits simply because another party benefits less. What matters far more is whether one party is harmed, and not compensated adequately, whilst another benefits. None of the three distributive justice analyses show this to be the case. Cotton (2016, p. 7) acknowledges that distributive injustices would likely be more prevalent in the US than the UK due to the 'split estate mineral regimes' cited by Fry *et al.*, which do not exist in the UK due to mineral rights being vested to the Crown. This, combined with the incipient evidence from the US, leads one to further question the potential for distributive injustice related to shale gas development in the UK.

Cotton also compares the amount of compensation offered to communities, through the United Kingdom Onshore Operations Group's (UKOOG) voluntary charter to the royalty payments received by mineral rights owners in the US – with the royalty payments being substantially larger (at least for solidly productive wells that have been able to reclaim operating costs). This comparison is problematic for two reasons, however. First, since publication of Cotton's article, HM Treasury (2016) in the UK has conducted a consultation on its proposed 'Shale Wealth Fund' (Whitton *et al.* 2017). This mechanism would allocate a

portion of the tax collected on shale gas development to the 'local communities' affected by development; the definition of what constitutes a 'local community' has not yet been finalised. This addresses concerns about the industry-provided compensation being subject to a voluntary charter; those voluntary payments, however, would not be affected by the government fund.

Second, the absolute amount of compensation received should be irrelevant for decisions on the ethicality of shale gas policy. What *is* relevant is whether any unequal effects (burdens) of development are compensated for adequately (see Jacquet 2014 for an overview of social impacts). To my knowledge, no one yet has attempted to systematically calculate the level of appropriate compensation. Note – this does not mean that current shale gas policy is ethically sound, but it means that such analysis is required before determining ethicality of policy. Social impacts are of such varied forms, from road damage to traffic congestion to strained emergency services to increases in crime and drug use to fluctuating house and rental prices to psycho-social stress, that any such calculation would necessarily be quite complex and involve a large suite of variables. Alternatively, one could assess the social, environmental, and economic effects of shale gas development in areas where development has occurred and gauge whether compensation has allowed for mitigation of negative impacts in these cases. Whilst numerous case studies exist (e.g., Malin 2014, Perry 2012, Willow *et al.* 2014), these often explicitly focus on areas where impacts have been felt and remain unmitigated.

Before one could claim that compensation policy fosters or ameliorates distributive injustices, he/she would need a more complete understanding of the extent to which negative impacts of shale gas development have remained unmitigated, after accounting for compensation to individuals and communities. Furthermore, a comparison of compensation afforded in actual cases where injustice is claimed to have occurred, compared to

compensation guaranteed under the policy being considered (e.g., UK policy), would be useful for assessing the potential of the policy to foster injustice.

Finally, a few challenges to the premise that adequate compensation helps ensure an ethical policy could be levelled. First, one might make the case that monetary compensation is incommensurate to the types of harm sustained by shale gas development. For example, empirical research has pointed to changes in place identity and place attachment as a key effect of shale gas development (Brasier *et al.* 2011, Fernando and Cooley 2016, Jacquet 2014, Jacquet and Stedman 2013, 2014, Jerolmack and Berman 2016, Kroepsch 2016, Morrone *et al.* 2015, Perry 2012, Sangaramoorthy *et al.* 2016, Schafft and Biddle 2015). Whilst financial recompense can reasonably mitigate the effects of strained emergency services and degraded road quality, it is unclear that money can do much to re-instil lost place identity or place meaning, or fully remedy negative environmental or human health outcomes, should they occur. Therefore, if the role of compensation is mitigation of negative burdens that disproportionally accrue, it might not actually be able to achieve this purpose. A potential area for future ethical reflection and analysis could be whether alternative, non-financial forms of compensation (e.g., direct provision of services connected to community well-being) could address the problem of compensation not adequately mitigating negative burdens of development.

Second, one might question the goal of compensation – is it simply to ease inequalities? As Rawls (2005, 2009) outlines in his 'difference principle', equality of liberties and equality of opportunity do not necessitate compensation or equal compensation. The worst off should not be disadvantaged in an absolute sense, but if this criterion is met and the condition of the worst off is actually improved in an absolute sense, a policy producing additional inequalities might not be objectionable. Of course, others would disagree with

Rawls's perspective, but here I merely draw attention to additional complexity inherent in ethical claims about compensation.

Definition of a 'community'

Connected to the concept of compensation is identification of the entity that receives that compensation – in the case of UK policy, this is the 'local community' (HM Treasury 2016). HM Treasury's consultation on the Shale Wealth Fund explicitly deals with the challenge of how to define a 'community' for the purposes of providing compensation. Cotton (2016, p. 8) alleges, 'injustices may occur when a community is defined by spatial proximity' and goes on to recommend that clear guidelines and mandates govern how compensation to communities can be spent. I do not question the possibility for spatially-defined communities (e.g., municipalities, councils) to cause some people to benefit more than others, but it is unclear to me why this would foster more injustices than other approaches to community definition. Again, the relevant ethical question should not be if someone benefits more than someone else, but if someone is materially harmed by the extractive development and those harms are not adequately mitigated through appropriate compensation. Of course, one could remedy the problem of unequal compensation by simply doing away with compensation (or shale gas development) entirely, but that seems ethically inappropriate unless there is a good reason to believe that harms will occur that cannot be mitigated.

The Shale Wealth Fund consultation (HM Treasury 2016) proposes compensation being allocated on 'local' and 'regional' levels. If an adequate portion of the funding is apportioned to the regional level, this would allow for greater flexibility in addressing and mitigating any adverse impacts that do arise. Cotton's critique seems to be based in the legitimate concern that environmental, economic, and social impacts of development are not tied to political boundaries of local councils (the municipal level in Britain). Regional

funding to address impacts, however, could be targeted where it is most needed. Whilst I agree with Cotton that some guidelines and mandates would be helpful for ensuring that compensation benefits those affected most by development, it must be acknowledged that the more restrictions imposed on how communities can spend their compensation, the less autonomy they have. Mandates on how communities allocate compensation directly conflicts with recommendations under PPFPE of local residents' participatory involvement in decision making; it could engender worse outcomes by ignoring local nuances.

Information access and procedural justice

Cotton thoroughly reviews the extent to which shale gas policy in the UK has adequate provisions for local residents to contribute meaningfully to the policy process, and to offer informed and autonomous consent for development. His summary evaluation is that 'in relation to public participation and consent it is clear that powers are being taken away from local communities' (Cotton 2016, p. 14). In addition to the evidence in his article, this is further brought to light by the recent decision of the UK communities secretary, Sajid Javid, to overturn Lancashire County Council's denial of planning applications for Cuadrilla to develop sites in that county. I fully agree with Cotton that procedural justice demands opportunities for meaningful two-way engagement and locals' ability to influence decision making. I define 'procedural justice' here in line with John Rawls's conception of 'perfect procedural justice', which is characterized by established criteria for what constitutes a fair/just outcome *and* procedures that ensure the fair outcome will materialise (Rawls 2009). What remains unclear to me is why procedural justice demands that local communities retain ultimate authority to authorise development.

The ethical necessity of access to information (asserted by the PPFPE) conflicts, at least in part, with the commitment to local level decision making. In the rural communities

of North America, where I have studied shale gas development for most of the last decade, informational and planning resources are extremely limited. Of course, government can work diligently to increase access to information, but many of the decision makers in small municipalities are volunteers or receive minimal stipends; even if information is readily available, the time they have to digest it is restricted and inadequate. I am not advocating for solely national level decision making, but merely drawing attention to potential conflicts that arise when seeking informed decisions alongside local participation in decision making. Intermediate levels exist between the local community and the national level. In the US, Canada, and Australia, unconventional gas development is regulated predominantly at the state/provincial level. In the UK, authority over shale gas decisions has already been devolved, de facto or de jure, to Scotland and Wales. Therefore, the UK policy on shale gas only applies to England. England is large and diverse, but just because the final decision on planning applications is not made at the local level does not mean that the public could not be afforded different means for engaging in the decision-making process. The procedural justice requirement is more about ensuring meaningful engagement than vesting final authority for approval with local government.

Beyond the issues of information access and level of regulation, the principle of autonomous consent, taken at face value, seems to imply some unpalatable consequences. In New York State, a moratorium on shale gas development existed from 2008-2014, following which this temporary hold became a permanent ban. During the moratorium, several communities passed legislation stating their support and desire for shale gas development to be allowed in their communities. Would autonomous consent over-rule New York's (or France's, or Quebec's) ban on shale gas development if a community sought development? This could lead to problems because many of the impacts would be regionally felt, and not just within a specific community. For example, many impacts of regional industrial

development – good and bad – of shale gas development in Pennsylvania (where there is much development) have been felt in southern NY (with a ban), due to workers and traffic flowing across the border.

If ethical policy on shale gas truly required autonomous consent in the strict sense, and if autonomous consent means that the local community has ultimate authority, then national (and state/provincial) prohibitions on development would be disallowed, or would simply be quickly over-ruled. This in itself is not a problem, but it seems inconsistent with the end result that many who advocate for local control desire, and it could lead to a host of other ethical dilemmas due to regionally-felt impacts. A conversation about ethical differences between protection from harm and welfare enhancement could shed further light on the instances in which autonomous consent may or may not be an appropriate goal.

Additional ethical arguments to consider

Whole energy system

Perhaps the primary consideration absent from Cotton's (2016) enumeration of ethical principles relevant to shale gas policy is that shale gas is not regulated in a vacuum. Energy (and natural gas specifically) is still being used in the UK (and everywhere else); that energy will come from somewhere. It is fine to point out, as Cotton does, that most shale gas resources exist in regions with previous fossil fuel extraction legacies (e.g., coal), which means that people previously exposed to the ills of extractive industry might be asked to bear further consequences of extraction. This does point to injustice, but a full ethical analysis cannot stop there. If that development does not occur, what energy development would occur in its stead? Would those same coal resources be tapped further? If so, would the potential harms to environment and health be less, more, or similar? If not domestic energy sources, would the UK import more liquefied natural gas from Qatar? If so, under what conditions

was that gas extracted? What harms and/or injustices were experienced in that nation? I am not saying that any of this analysis necessitates policy that goes 'all out for shale' in the north of England, but these additional questions do require reflection.

A further energy system consideration, on the national level, is the extent to which investments in natural gas domestically within any given nation postpone or retard focus on renewable energy generation (Evensen 2016b, Gilbert and Sovacool 2014). If a government's support for unconventional gas concomitantly reduces incentives for truly low-carbon technologies, the effects of exacerbating global climate change and delaying work to mitigate climate change must be incorporated into a full consequentialist analysis.

Bringing the systems view to the issue of compensation, Cotton (2016, p. 9) states, 'An ethically acceptable fracking community payback scheme under the PPFPE must therefore ensure political safeguards for communities suffering multiple indicators of socio-economic deprivation'. This seems quite reasonable to achieve the stated goal of preventing economic coercion into accepting development. Nevertheless, one is left asking to what extent such provisions exist for other forms of energy development. I am not seeking to descend into the fallacy that just because one injustice is allowed, others are permitted as well. I am trying to point out that energy development will occur whether shale gas development does or not. From a consequentialist perspective, it is ethically relevant to consider what injustices will occur in the energy development that takes place in the absence of shale gas development in the UK, if policy prohibits or restricts development. If an injustice relates both to shale gas policy and policy on other forms of development, it is incumbent upon us researchers to explicitly note that the ethical critique really has little to do with shale gas and much more to do with energy governance and regulation writ large.

Reflection on the whole energy system again becomes necessary when Cotton (2016, p. 10) declares that 'notably absent is the opportunity for locally affected communities to

question the "need case" for fracking activities, and thus [they] cannot actively provide or withhold informed consent'. How is this different from procedures for other forms of energy development? For onshore wind development in the UK, there is more community capacity to regulate development. (Somewhat ironically many of the same groups who decry UK shale gas policy because it limits local decision making also oppose the policy that allows communities to regulate wind development. This is presumably because the wind policy was ostensibly designed to allow for opposition to wind farms, whilst the shale gas policy was designed to prevent effective opposition to development.) Cotton (2016, p. 10) directly links the lack of adequate public engagement on shale gas development to 'other energy-related projects' when he acknowledges that many engagement processes do not allow for deliberative mechanisms or provision of community consent. Let me be clear, poor procedural (or distributive) justice for one type of energy development in no way justifies poor procedural justice elsewhere, but it does require us to give extra attention when evaluating the full consequences of shale gas policy – energy development will still occur and the injustices invoked by that development merit similar attention.

Virtue

It is far beyond the scope of this brief article to delve into an entire branch of ethical thinking in depth, but I do wish to at least draw attention to a way of considering the ethically of shale gas policy in addition to the distributive justice and procedural justice angles introduced by Cotton (2016). Hurka (2001) defines virtue as an intrinsic good that can be treated as any other intrinsic good worthy of promotion and pursuit under consequentialist thinking. One might object to shale gas policy if it fails to ensure one's capacity to live virtuously. Whilst virtuous living is not simple to characterise, a case could be made that seeking to protect or foster community character and place identity is a virtuous act (Hurka 2006). Cotton (2016,

p. 12) just briefly touches on the possibility that shale gas policy might inhibit upon this virtuous act when he writes that the UK approach 'recognises and prioritises certain place identities over others'; the wealth of studies pointing to effects on place identity and place attachment further this contention (see section on compensation above). Therefore, one way of assessing the ethicality of shale gas policy would be to consider the effect it has on local residents' capacity to live and act virtuously, in addition to the effects that the policy could have on material well-being.

Conclusion

Cotton's (2016) initial attempt to lay out an ethical framework for assessing the ethicality of policy on shale gas development is an extremely important contribution to the academic literature on this form of extractive development. Public claims about the moral character of shale gas development have abounded for some time; yet, the absence of a concerted exploration of what exactly characterises such development as ethical or not has made such claims little more than individual opinions and has severely limited their usefulness in policy conversations on this contentious issue (Evensen 2016a). Cotton's analysis helps to rectify this tendency.

I have attempted to continue the discussion of what distinguishes ethical decision making on shale gas development by expanding upon four aspects of Cotton's (2016) argument: (1) the role of compensation in distributive justice, (2) the definition of a 'community', (3) the need for information provision, and (4) the best way to ensure procedural justice. I have further introduced two issues with ethical relevance not discussed in Cotton's work: (1) the role of shale gas development in a larger energy system and (2) the role of virtue in determining ethical policies. Further discussion and analysis in this philosophically interesting and highly policy relevant area could move beyond consideration

of the dominant ethical frameworks considered to date (i.e., distributive and procedural justice and precautionary approaches). A detailed consequentialist approach to evaluating shale gas development could be particularly useful due to the privileged place that consequentialist thinking often enjoys within policy processes; such analysis might move ethical thought one step closer to its necessary but neglected role in public policy and regulatory decision making on energy development (Evensen 2015, Hays and de Melo-Martín 2014).

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